ABSTRACT

Improved actuation assemblies of this invention are designed for use with variable geometry turbocharger comprising a plurality of movable aerodynamic vanes disposed within a turbocharger turbine housing. The turbocharger includes an actuator that is coupled to a movable unison ring disposed within the turbine housing, and attached to the plurality of aerodynamic vanes. The actuation assembly comprises a crank arm rotatably disposed within the turbine housing. The crank arm is attached at a first end to the actuator, and is attached at a second end to the unison ring. A first gear member is attached to the crank arm second end and includes a number of teeth. The unison ring includes a second gear member attached thereto that also comprises a number of teeth. The teeth of the first and second gear members are cooperatively engaged with one another. In an example embodiment, the second gear member is movably attached to the unison ring to maintain predetermined distance between the first and second gear members during operation of the turbocharger and related thermal movement of the unison ring.